user's manual

eng

NVDN-601V/IR-white
NVDN-601V/IR-black

http://www.e-camere.ro/camere supraveghere/Novus/NVDN-601V-IR

NOVUS®

INFORMATION

EMC (2004/108/EC) and LVD (2006/95/EC) Directives

CE Marking

Our products are manufactured to comply with the requirements of the following directives and national regulations implementing the directives:

- Electromagnetic compatibility EMC 2004/108/EC.
- Low voltage LVD 2006/95/EC with further amendment. The Directive applies to electrical equipment designed for use with a voltage rating of between 50VAC and as well as 75VDC and 1500VDC.

WEEE Directive 2002/96/EC

Information on Disposal for Users of Waste Electrical and Electronic Equipment

This appliance is marked according to the European 1000VAC Directive on Waste Electrical and Electronic Equipment (2002/96/EC) and further amendments. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The symbol on the product, or the documents accompanying the product, indicates that this appliance may not be treated as household waste. It shall be handed over to the applicable collection point for used up electrical and electronic equipment for recycling purpose. For more information about recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

RoHS Directive 2002/95/EC

Out of concern for human health protection and friendly environment, we assure that our products falling under RoHS Directive regulations, regarding the restriction of the use of hazardous substances in electrical and electronic equipment, have been designed and manufactured in compliance with the above mentioned regulations. Simultaneously, we claim that our products have been tested and do not contain hazardous substances whose exceeding limits could have negative impact on human health or natural environment.

Information

The device, as a part of professional CCTV system used for surveillance and control, is not designed for self installation in households by individuals without technical knowledge.

The manufacturer is not responsible for defects and damages that result from improper or inconsistent with user's manual installation of the device in the system.

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SAFETY REQUIREMENTS

WARNING!

THE KNOWLEDGE OF THIS MANUAL IS AN INDESPENSIBLE CONDITION OF A PROPER DEVICE OPERATION. YOU ARE KINDLY REQUSTED TO FAMILIRIZE YOURSELF WITH THE MANUAL PRIOR TO INSTALLATION AND FURTHER DEVICE OPERATION.

WARNING!

USER IS NOT ALLOWED TO DISASSEMBLE THE CASING AS THERE ARE NO USER-SERVICEABLE PARTS INSIDE THIS UNIT. ONLY AUTHORIZED SERVICE PERSONNEL MAY OPEN THE UNIT

INSTALLATION AND SERVICING SHOULD ONLY BE DONE BY QUALIFIED SERVICE PERSONNEL AND SHOULD CONFORM TO ALL LOCAL REGULATIONS

WARNING!

PRIOR TO UNDERTAKING ANY ACTION THAT IS NOT DESCRIBED FOR THE GIVEN PRODUCT IN USER'S MANUAL AND OTHER DOCUMENTS DELIVERED WITH THE PRODUCT, OR IF IT DOES NOT ARISE FROM THE USUAL APPLICATION OF THE PRODUCT, MANUFACTURER MUST BE CONTACTED UNDER THE RIGOR OF EXCLUDING THE MANUFACTURER'S RESPONSIBILITY FOR THE RESULTS OF SUCH AN ACTION.

IMPORTANT SAFEGUARDS AND WARNINGS

1. Prior to undertaking any action please consult the following manual and read all the safety and operating instructions before starting the device.
2. Please keep this manual for the lifespan of the device in case referring to the contents of this manual is necessary;
3. All the safety precautions referred to in this manual should be strictly followed, as they have a direct influence on user's safety and durability and reliability of the device;
4. All actions conducted by the servicemen and users must be accomplished in accordance with the user's manual;
5. The device should be disconnected from power sources during maintenance procedures;
6. Usage of additional devices and components neither provided nor recommended by the producer is forbidden;
7. Mounting the device in places where proper ventilation cannot be provided (e. g. closed lockers etc.) is not recommended since it may lead to heat build-up and damaging the device itself as a consequence;
8. Mounting the camera on unstable surface or using not recommended mounts is forbidden. Improperly mounted camera may cause a fatal accident or may be seriously damaged itself. The camera must be mounted by qualified personnel with proper authorization, in accordance with this user's manual;

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SAFETY REQUIREMENTS

9. Device should be supplied only from a power sources whose parameters are in accordance with those specified by the producer in the camera technical datasheet. Therefore, it is forbidden to supply the camera from a power sources with unknown parameters, unstable or not meeting producer's requirements;
10. Signal cables (conducting TV or / and telemetric signal) should be placed in a way excluding the possibility of damaging them by accident. Special attention must be paid to cables getting from the camera and connecting the power supply;
11. To avoid equipment damage, whole TV circuit should be equipped with properly made discharge-, overload- and lightning protection devices. Usage of separating transformers is advised;
12. Electric installation supplying the device should be designed to meet the specifications given by the producer in such a way that overloading is impossible;
13. User cannot repair or upgrade the equipment himself. All maintenance actions and repairs should be conducted only by qualified service personnel;
14. Unplug the camera from the power source immediately and contact the proper maintenance department when the following occurs:

- Damages to the power cord or to the plug itself;
- Liquids getting inside the device or exposure to strong mechanical shock;
- Device behaves in a way not described in the manual and all adjustments approved by the manufacturer and possible to apply by user himself, seem not to have any effect;
- Camera is damaged;
- Atypical behaviour of the camera components may be seen (heard).

15. In necessity of repairs attention to using only original replacement parts (with their parameters in accordance with those specified by the producer) should be paid. Non-licensed service and non-genuine replacement parts may cause fire or electrocution;
16. After maintenance activities tests should be run to ensure proper operation of all the functional components of the device.

Attention!
Technical changes reserved without prior notice and printing errors possible.

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FOREWORD INFORMATION

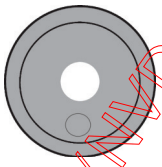
1. PACKAGE CONTENTS

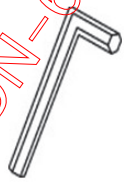
Camera

Screws and anchors, 3 pcs

Extra video output cable

User's manual


Base seal


Allen key

If any of the listed equipment has been damaged during transport or if the package is incomplete, the contents of package should be packed back in to the original box. Please contact your local NOVUS distributor for further assistance.

2. MAIN CHARACTERISTICS

- Mechanical IR cut filter
- Horizontal resolution: up to 750 TVL
- Min. illumination: from 0.00001 lx/F=1.4 (0 lx IR on)
- Built-in IR LED, 24 pcs
- Built-in visible light sensor
- Wide dynamic range (WDR)
- High Light Compensation (HLC)
- Digital Noise Reduction (DNR)
- Lens type:
  varifocal 2.8~12 mm
- 3-axis camera module adjustment
- Vandal-proof housing, available in black/white colors
- Privacy zones: 8
- Digital Image Stabilization
- Other functions: various picture effects, motion detection
- OSD menu,
- Enclosure color:
  - white
  - black
- 12VDC Power supply

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FEATURES AND SPECIFICATION

3. SPECIFICATION

	NVDN-601V/IR-black	NVDN-601V/IR-white
IMAGE		
Pick-up Element	CCD imager, 1/3" Nextchip NEPIS-9	
Number of Effective Pixels	976 (H) x 582 (V)	
Horizontal Resolution	700 TVL - color mode, 750 TVL - B/W mode	
Min. Illumination	0.015 lx/F=1.4 - color mode (1/50 s), 0.002 lx/F=1.4 - B/W mode (1/50 s), 0.00004 lx/F=1.4 - color mode DSS, 0.00001 lx/F=1.4 - B/W mode DSS 0 lx (IR on) - B/W mode	
S/N Ratio	> 52 dB (AGC off)	
Electronic Shutter	Auto: 1/50 s ~ 1/100 000 s	
Digital Slow Shutter (DSS)	0.04 s ~ 5.12 s	
LENS		
Type	Auto iris DC, f=2.8~12 / F=1.4	
Angle of View (H)	84° ~ 31°	
DAY/NIGHT		
Type	Mechanical IR cut filter	
Switching Mode	Auto/manual	
Switching Level Adjustment	Yes	
Switching Delay	0 ~ 15 s	
OTHER FUNCTIONS		
OSD	English, Russian and others	
Back Light Compensation (BLC)	Yes	
High Light Compensation (HLC)	Yes	
Wide Dynamic Range (WDR)	Yes	
Digital Image Stabilization (DIS)	Yes	
Digital Noise Reduction (DNR)	Yes	
Digital Zoom	32x	
Privacy Zones	8	
Motion Detection	Yes	
Image Processing	Mirror effect, 180˚ image rotation, sharpening	
IR LED		
Number	24	
Range	20m	
Angle	30°	
INTERFACES		
Video Output	BNC, 1.0 Vp-p, 75 Ohm	
INSTALLATION PARAMETERS		
Dimensions (mm)	119.5 (Ø) x91(H)	
Weight	560 g	
Enclosure	Vandal proof, aluminium, black, poly-carbonate bubble	Vandal proof, aluminium, white, poly-carbonate bubble
Degree of protection	IP66	
Power Supply	12 VDC	
Power Consumption	1.3 W 4W (IR on)	
Operating Temperature	-10°C ~ 50°C	

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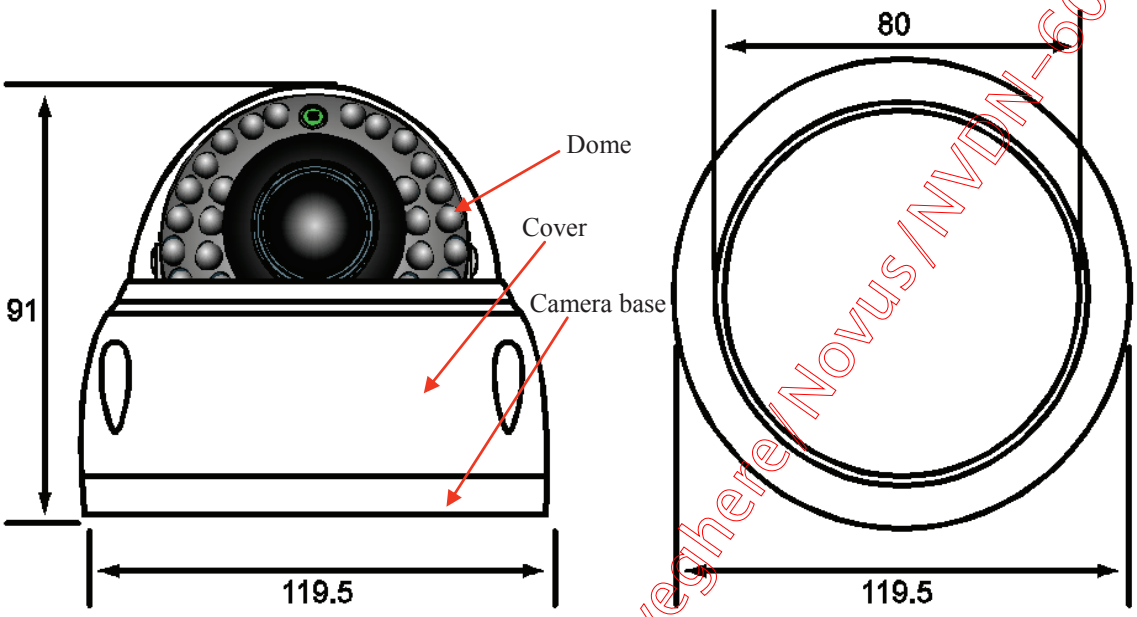
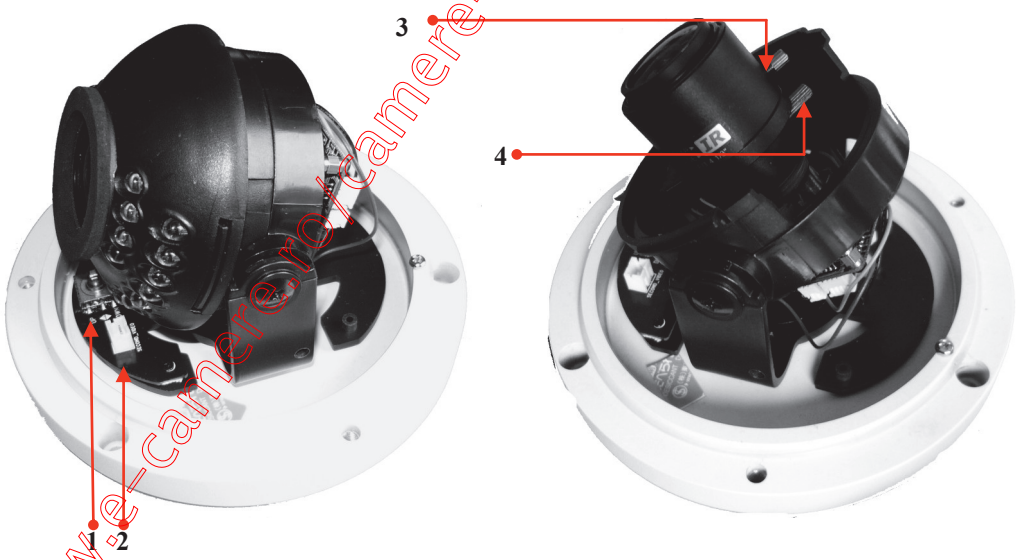
3.1 Dimensions



Dimmenstions in mm

3.2. View of the camera, layout of the camera items (after unscrewing the dome)

Overview with IR illuminator removed



1. joystick implementing UP, LEFT, RIGHT, DOWN, SET commands
2. extra video output
3. focus adjustment screw
4. zoom adjustment screw
5. illumination sensor
6. IR LEDs

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INSTALLATION

4. INSTALLATION

Prior to installation please familiarize yourself with the product, its parameters and installation process.

To install the camera please follow the instructions below:

- Remove the cover by unscrewing three screws mounting it to baseplate and open the camera.
- Place seal base of the camera in a desired place and use its mounting holes as a drilling pattern. Mark drilling points using a punch.
- Drill the screw holes and cable hole using an appropriate driller, in case of concrete ceiling or wall mounting please use appropriate plastic plug and screws (not included in the package).
- Mount the camera to desired surface using included screws or if needed, different mounting kit (not included). Please check if the sealing rubber gaskets are placed on the mounting screws. If required, additionally seal mounting holes with appropriate sealing mass
- Adjust the position of the camera module.
- Remove the IR illuminator (by gently prying latches visible on its edge). Unscrew blocking knobs and adjust focal length and focus.
- If needed, adjust the desired settings in the camera menu using joystick.
- Put on IR illuminator and camera cover back, screwing it onto the base.

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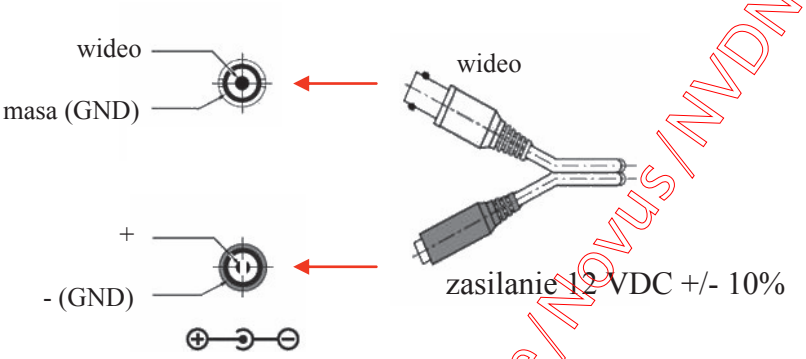
INSTALLATION

4.1 CONNECTIONS

The camera is equipped with a video and power cable finished with 2 plugs, one for video output (yellow one), the other for power supply 12VDC±10% (red one). Images below show plug polarization.



The following connecting order should be kept:

- connect video cable to the BNC plug
- connect power supply to the power plug

ATTENTION: Prior to connecting the power supply make sure that all required parameters (output voltage, output current and polarization) are correct. Using improper power supply may cause malfunction or camera damage. In such a case, warranty is void.

4.1.1 Extra video output connection

Camera has an additional video output which is very useful during installation or camera maintenance. To use the Extra Video output please connect the included cable (mentioned in the chapter 1 equipment list) to the Extra Video connector presented in the chapter 3.2

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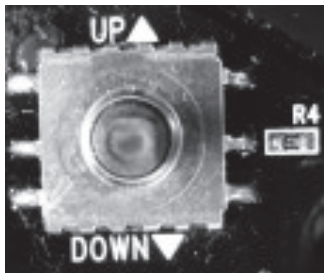
SETTINGS

5. SETTINGS

Camera is equipped with an OSD menu. During camera operation, status information can be displayed on the screen.

As mentioned before, a joystick is placed near the camera module for navigating and changing menu settings:



5.1 Main menu

In order to enter the menu press the joystick, which results in executing SET command. For choosing the submenus please move the joystick into *UP, DOWN* positions. If the ↵ symbol is present, enter particular sub-menu by pressing SET. To change the parameters use the *LEFT* and *RIGHT* joystick positions. In order to leave the menu select ***EXIT*** and choose the option

SAVE↵ saving settings and exit menu.

RESET↵ restoring factory defaults for the camera.

CANCEL↵ exit the menu without saving changes.

To exit submenu please select ***RETURN*** position. Select (via left/right joystick movement) option:

RET↵ to moving to a higher-level menu.

SAVE & END↵ to saving setting and leaving the menu immediately.

and press SET.

In order to enter the menu, please press SET. The following main menu is displayed on the screen:

MAIN MENU

▸ LENS	MANUAL ↵
EXPOSURE	↵
BACKLIGHT	OFF
WHITE BAL.	ATW
DAY&NIGHT	AUTO ↵
SMART 3DNR	ON ↵
F-DNR	OFF
FUNCTION	↵
EXIT	SAVE↵

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5.1.1 *LENS* submenu

This submenu allows to set the lens parameters:

MANUAL manual settings of the lens operating mode.

BRIGHTNESS sets brightness level in the range from 1 to 100.

DC DC auto Iris lens mode.

BRIGHTNESS sets brightness level in the range from 1 to 100.

IRIS SPEED sets iris speed in the range from 1 to 5.

VIDEO video lens mode.

5.1.2 *EXPOSURE* submenu

This submenu allows to set the parameters connected with AE and controlling the iris:

SHUTTER selection of shutter mode. Automatic (***AUTO***) shutter mode as well as ***MANUAL*** adjustment in the range 1/50s~1/100000s are available and ***FLK*** for flickering light conditions.

BRIGHTNESS sets brightness level in the range from 0 to 255.

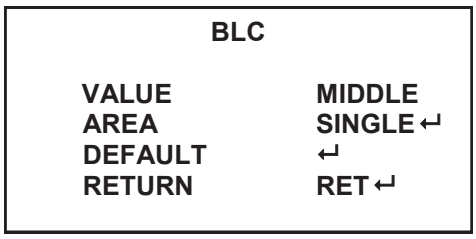
AGC Automatic Gain Control function. Allows for switching between ***LOW***, ***MIDDLE*** and ***HIGH*** gain values.

SENSUP Digital Slow Shutter function - helps to obtain better, brighter images in low light conditions. Longer imager exposure (from x2 to x256) causes the image to be less frequently read.

5.1.3 *BACKLIGHT* submenu

These compensation functions allow to enhance visibility of the objects located in the foreground, surrounded by strongly illuminated background (BLC) or for enhancing visibility of the objects located near the strong light source (HSBLC).

BLC function allows to enhance visibility of the objects located in the foreground, surrounded by strongly illuminated background. Pressing SET button in this mode displays the following menu:



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SETTINGS

Submenu presented allows to set the size and location of the area where the ***BLC*** function is active, furthermore it allows to set the sensitivity of the function.

VALUE sets the function's sensitivity (LOW, MIDDLE, HIGH)

AREA allows to choose beetwen SINGLE or DOUBLE zones, adjust the position and size

DEFAULT restores default BLC settings.

HSBLC high light compensation function. It allows to enhance visibility of the objects located near the strong, point light source. If a strong, point light source appears on the screen, function will mask it for effective observation of the scene itself (this function is best used to, for example, observe licence-plates of the cars). Selecting displays the following screen:

HSBLC	
▸ GAIN	----|--55
MODE	NIGHT
MASK LEVEL	--|----25
DEFAULT	↵
M. SKIP AREA	OFF
RETURN	RET↵

GAIN sets the function's sensitivity (from 0 to 100)

MODE ALL DAY or ***NIGHT ONLY*** (recommended)

MASK LEVEL defines size of masking area.

DEFAULT restores default HSBLC settings.

M. SKIP AREA turns on and allows to set size and position of area which isn't masked.

D-WDR this function allows to enable/disable wide dynamic range function that enables to effectively observe the scene with different illumination levels.

DWDR	
▸ LOW LEVEL	-|----- 2
HIGH LEVEL	------| 10
RETURN	RET ↵

LOW LEVEL sets the function's sensitivity for low ilumination areas (from 0 to 15).

HIGH LEVEL sets the function's sensitivity for high ilumination areas (from 0 to 15).

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5.1.4 *WHITE BAL* submenu

This feature allows to set appropriate color settings using following options:

ATW auto tracking white balance based on color temperature.

AWC→SET this mode enables adaptive setting of white balance. In order to obtain the optimum state under the current illumination, direct the camera at a sheet of white paper and press SET. When lighting parameters change (e.g. light bulbs changed to halogen lamps, daylight to artificial light etc.), procedure mentioned above should be repeated;

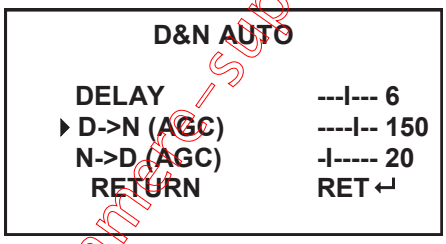
AWB auto white balance adjustment.

MANUAL manual mode settings. In case of inappropriate color settings for ***ATW, AWC*** modes it is possible to set ***RED*** and ***BLUE*** values manually. Color values range from 0 to 100 and are represented by sliders. Any change in the color components are instantly applied to the image.

5.1.5 *D&N* submenu

Allows to adjust day/night settings. Available settings are: ***AUTO, EXT, COLOR***, ***B/W***.

AUTO Camera switches between night (b/w) and day (color) mode automatically, depending on current illumination conditions. Selecting and confirming displays the following sub-menu:



DELAY sets the delay between color and b/w mode switching (1~15 s.).

D->N (AGC) sets the illumination threshold that switches the camera from day to night mode (0~255)

N->D (AGC) sets the illumination threshold that switches the camera from night to day mode (0~255).

EXT selecting enables day/night switching based on indications of CDS sensor. Additionally, entering the sub-menu allows to adjust ***DELAY*** (1~15 s.).

COLOR forces continuous color operation.

B/W forces continuous black & white operation. Selecting allows for adjusting additional values:

BURST enables/disable chrominance synchronization signal.

IR SMART function ensuring balanced brightness level of the picture during operation with an IR illuminator (which prevents overexposure of the objects located close to the camera and its illuminator). Entering the function allows to set function area and sensitivity, in the same manner as in motion detection menu.

IR LED unavailable

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SETTINGS

5.1.6 *SMART 3DNR* submenu

Digital noise reduction menu allows to adjust the value and turn on/off Smart NR. Smart NR is Automatic Digital Noise Reduction which automatically change the level by detecting the movement. Turning on ***SMART NR*** allows to change ***LEVEL*** and ***SENSITIVITY*** of noise reduction.

SMART 3DNR	
▸ VALUE	----|--120
SMART NR	ON
SMART LEVEL	--|----25
SENSITIVITY	--|----25
RETURN	RET ↵

5.1.7 *F-DNR* submenu

F-DNR (defog) function does a process of clearing blurred image caused by fog and snow by analyzing the brightness of video and colors compensation. Mode could be ***AUTO*** or ***MANUAL.***

MANUAL mode sub-menu:

F-DNR MANUAL	
▸ LEVEL	----|--18
COLOR GAIN	|------ 0
EDGE GAIN	|------ 0
GAMMA	0.55
RETURN	RET ↵

LEVEL adjust F-DNR level (from 0 to 31)

COLOR GAIN adjust color gain value (from 0 to 10)

EDGE GAIN adjust edge gain value (from 0 to 10)

GAMMA select gamma value (from 0.05 to 1.00)

AUTO mode allows to change DETECT LEVEL (from 0 to 5).

5.1.8 *FUNCTION* submenu

Selecting and entering submenu displays the following screen:

FUNCTION	
▸ MOTION	OFF
PRIVACY	OFF
D-EFFECT	↵
IMAGE ADJ	↵
COMM ADJ	↵
SYNC	INT
LANGUAGE	ENGLISH
RETURN	RET ↵

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MOTION DET. allows (provided that ***ON*** option is selected) to turn a built-in motion detection feature on or off. Motion detection may simultaneously be conducted in four independent zones (with their size and location selectable by user). Detection of motion displays an appropriate information superimposed on the screen.

After selecting ***ON*** and pressing SET the submenu allowing to adjust motion detection settings is displayed, as depicted below.

MOTION	
AREA	1
AREA DISPLAY	ON↵
VALUE	----|--60
MOTION VIEW	ON
RETURN	RET ↵

AREA selects the number of the area for further settings.

AREA DISPLAY turns on/off particular area. Also allows to set the position and size of the area.

VALUE refers to sensitivity (from 0 to 100)

MOTION VIEW enable / disable indication of motion detection.

PRIVACY allows to enable (by selecting ***ON***) privacy zones. Part of the screen may be masked using eight rectangular zones. Selecting ***ON*** and pressing SET displays a sub-menu, containing eight masks positions.

PRIVACY	
AREA	1
AREA DISPLAY	ON↵
COLOR	----|--9
TRANSPAR	----|--2
RETURN	RET ↵

AREA selects the number of the area for further settings.

AREA DISPLAY turns on/off particular area. Also allows to set the position and size of the area.

COLOR changes color of a zone (16 available).

TRANSPAR refers to transparency of the area. (from 0 - most transparent to 3 - not transparent)

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SETTINGS

D-EFFECT menu allows to set additional digital functions.

D-ZOOM allows to set the digital zoom up to x32. After entering to sub-menu it is possible to set:

RANGE magnification (from 1.0 to 32)

PAN refers to horizontal position of the picture (from -100 to 100)

TILT refers to vertical position of the picture (from -100 to 100)

SMART ZOOM allows to turn on the digital zoom up to x5.0 when the motion is detected. After entering to sub-menu it is possible to set:

RANGE magnification (from 2.0 to 5.0)

POSITION allows to set the position of magnified area.

SENSITIVITY sensitivity of motion detection (from 0 to 100)

TIME sets the time of displaying magnified picture.

DIS (Digital Image Stabilisation). This function eliminates image blurring from camera shaking caused by vibrations from passing vehicles or gusts of wind.

FREEZE holds the picture in turning on moment.

MIRROR allows to change viewpoint as mirror/ rotate/ v-flip.

NEG. IMAGE enables/disables displaying of the negative video image.

IMAGE ADJ allows for enabling the additional picture effects.

SHARPNESS changes sharpness of the displayed video picture (from 0 to 31).

MONITOR selects between ***CRT/LED*** as used monitor, and allows to set ***GAMMA***, ***PED LEVEL*** and ***COLOR GAIN***.

LENS SHADING allows to compensate darkened areas appearing in screen corners due to lens usage. Selecting ***ON*** allows to enter a sub-menu, where can be adjusted:

LEVEL sets the function sensitivity (from 0 to 60)

H-CENTER refers to horizontal position of the center.

V-CENTER refers to vertical position of the center.

DEFECT allows to adjust parameters used in Dead Pixel Correction function. pressing SET displays the submenu allowing to adjust ***SENSUP, DIFF, THRESHOLD*** and then press ***START*** to run.

Note: White CCD pixels are not an indicator of the CCD malfunction, but are inherent consequence of the manufacturing process.

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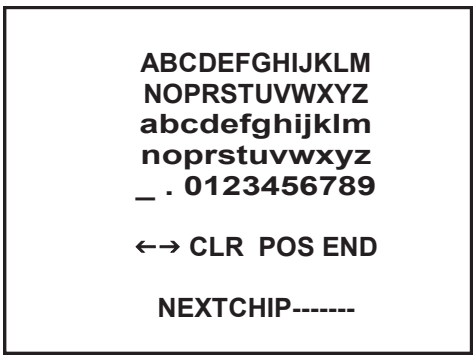
COMM ADJ menu contains additional camera options.

TITLE allows to enter a string of characters that later is displayed on the screen, e.g. as camera title.



Screen contains mainly alphanumerical characters, which may be used in camera's title. Select desired character and please apply it by pressing SET key. Currently edited title is visible at the bottom of the screen. A line just above it contains buttons for editing the title. To enable particular functions, please highlight them as normal characters and confirm by pressing SET. Button functions are described below:

← Moves character highlight cursor left.

→ Moves character highlight cursor right.

POS adjusts the position of entered characters.

CLR erases the whole title.

END exits title editing menu.

PROTOCOL unavailable.

RS485 unavailable.

LANGUAGE switches between OSD languages: English, Russian and others.

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